



Proposed Water Supply Nutrient Strategy Jordan Reservoir Watershed

**Environmental Planning and Policy Committee
NC Board of Transportation
May 2, 2007**

Algae bloom Morgan Creek Arm, Jordan Lake, August 29, 2005 (photo courtesy Doug Wakeman)

Jordan Reservoir Watershed

Haw Subwatershed

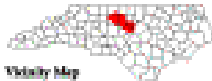
Upper New Hope Subw'shed

Lower New Hope Subw'shed

County	Co. Area, 2000 (mi ²)	Fraction of County Area in Jordan W'shed
ALAMANCE	430	95%
CASWELL	425	20%
CHATHAM	683	45%
DURHAM	290	35%
GUILFORD	649	55%
ORANGE	400	55%
ROCKINGHAM	566	25%
WAKE	832	8%

LEGEND

-  Municipality
-  County Boundary
-  Surface Water Intake
-  Water Supply Watershed
-  Hydrography
-  NCEM Watershed Site (Minor)
-  WS-I
-  Haw River Watershed
-  NCEM Watershed Site (Major)
-  WS-III
-  Upper New Hope Watershed
-  Dam
-  WS-IV
-  Lower New Hope Watershed



Jordan Reservoir Nutrient History

1960's, 1970's - Nutrient problems predicted

1981-82 – Reservoir constructed

1983 – “Nutrient Sensitive”, 2 mg/l TP discharge limits

1983 – present: Consistently rated overenriched

“ Frequent harmful algal blooms in Summer

1996, 2003: Taste & odor complaints, Cary

1997 - Clean Water Responsibility Act – tighter N, P limits

2000 – UNH Dischargers 0.5 mg/l Summer TP

2002 - Upper New Hope Arm Impaired (303d)

“ - EMC approves reservoir model

2003-2004 - Jordan Stakeholder Project

2005: Oct – Entire reservoir impaired

Mar 2006 – Fish kill, Upper New Hope

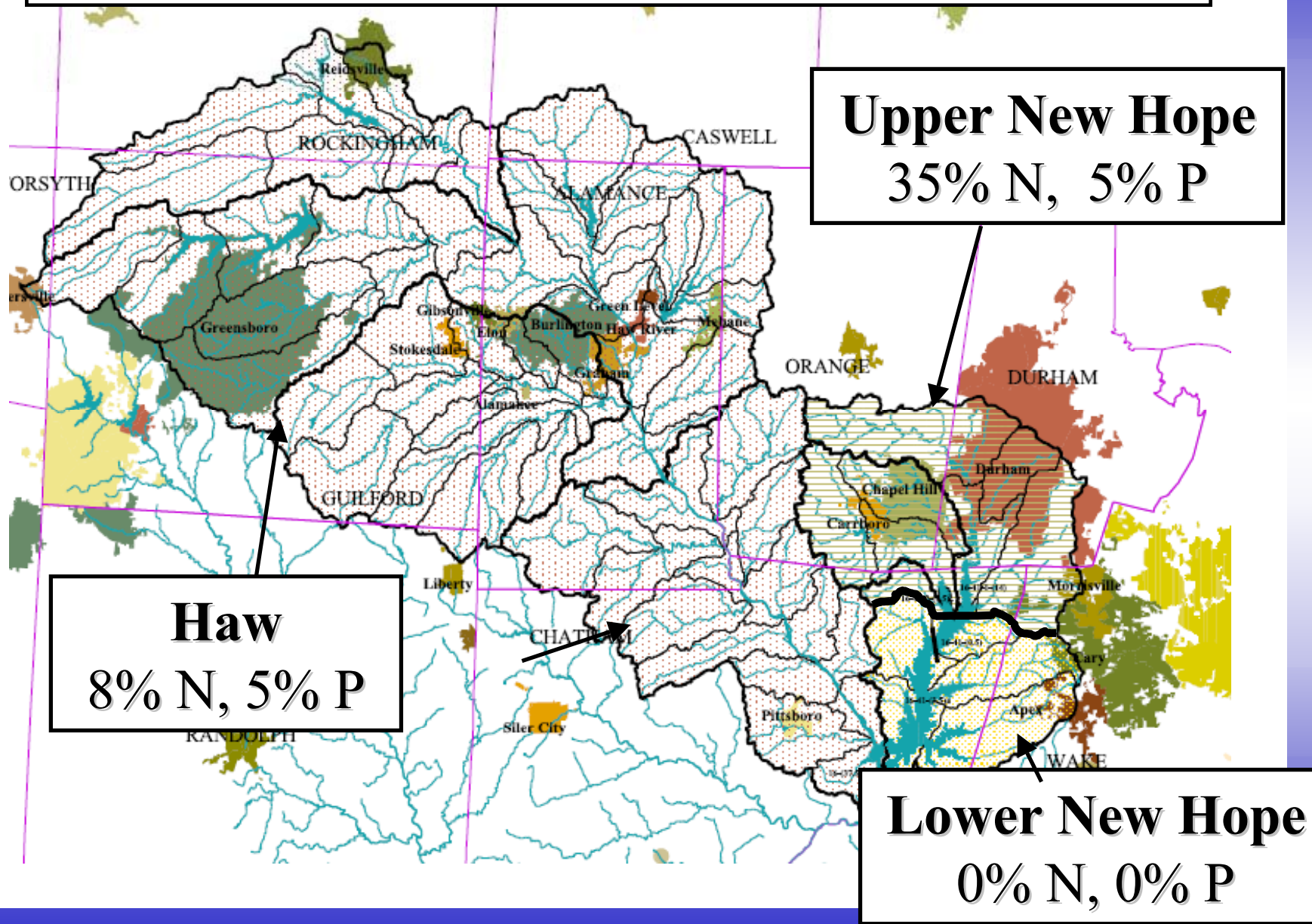
2006 – Algal blooms. user conflicts

Algal bloom Haw River Arm, Jordan Reservoir, Aug. 15, 2005 (photo courtesy Doug Wakeman)

Mandates to NC Environmental Management Commission

- 143B-282 – Protect water quality, Rules
- Clean Water Responsibility Act of 1997
 - Set goals for Nutrient Sensitive Waters
 - Proportional responsibility
 - Discharge limits
- Federal Clean Water Act
 - Requires states address impaired waters

Jordan Nutrient Reduction Goals



Proposed Jordan Nutrient Rules

15A NCAC 2B

- **.0262** Goals
- **.0263** Nutrient Management
- **.0264** Agriculture
- **.0265** Stormwater - New Development
- **.0266 Stormwater - Existing Development**
- **.0267** Riparian Buffers - Protection
- **.0268** Riparian Buffers - Mitigation
- **.0269 Options for Offsetting (Trading)**
- **.0270** Wastewater Discharge
- **.0271 Stormwater - State and Federal Entities**
- **.0272** Riparian Buffer Mitigation Fees
- **.0311** Cape Fear River Basin (Schedule of Classifications)

Stormwater – State & Federal .0271

- Parallels local gov't stormwater rules
- DOT, universities
- DWQ administers

New Roads – export rate targets, stream protection

Existing Roads – retrofits toward long-term % goals

Maximum latitude to meet w'shed objectives

DOT Stormwater Costs

New Roads (DOT estimate) ~\$2m/yr

Existing Roads Scenarios:

	<u>Per Yr</u>	<u>Total</u>
• Conservative - all outfalls:	~\$20m/yr	\$600 million
• Programmatic - wholly EEP:	~ \$2m/yr	\$58 million
• Meet targets treating co-mingled drainage:		
	~ \$4m/yr	\$130 million

Rulemaking Schedule

2007	March	<ul style="list-style-type: none">• EMC approved public hearings• Submitted fiscal note
	May	Board of Transportation
	June-Aug	Hearings, formal comment period
	Aug-Nov	Hearing Officers deliberate
2008	Jan	Request EMC adopt rules
	Feb-Apr	RRC
	Feb-May	Effective date (< 10 objections)
	May-Aug	General Assembly
	Aug-Sep	Effective date (\geq 10 objections)